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Ref. No.: UEMC/QC-344/01A-01

Gradation of Wet Mix Macadam
[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**09/11/2021**
Sample Supplied by:	Agency / Contractor		
Material :	Wet Mix Macadam (WMM)	**Total weight taken:**	**10 kg**

Gradation Test for WMM Sample:

Sl no	Sieve Size (mm)	Wt retained (gm)	Cumulative wt retained (gm)	% Cumulative wt retained	% Fines passing	Desired Gradation as per MoRTH Specification
1	53	0	0	0	100	100
2	45	21	21	0.21	99.79	95-100
3	22.4	3170	3191	31.91	68.09	60-80
4	11.2	2550	5741	57.41	42.59	40-60
5	4.75	1350	7091	70.91	29.09	25-40
6	2.36	1050	8141	81.41	18.59	15-30
7	0.6	540	8681	86.81	13.19	8-22.
8	0.075	925	9606	96.06	3.94	0-8

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Ref. No.: UEMC/QC-344/01A-02

Tests on Aggregate

[IS:2386:1963(RA 2016)]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 02**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**09/11/2021**
Sample Supplied by:	Agency / Contractor		
Material:	Wet Mix Macadam (WMM)		

The test results conducted on the aggregate sample for WMM are as follows:

No.	Description	Test Result	Standard Requirements as per Morth V Revision For WMM
1	Flakiness index	20.75	Max Value for WMM for Combined Index Is 30%
2	Elongation index	8.16	

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Ref. No.: UEMC/QC-344/01A-03

Aggregates Impact Value
[IS:2386:1963(RA 2016)]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**09/11/2021**
Sample Supplied by:	Agency/Contractor		
Material:	Wet Mix Macadam (WMM)		

The test results conducted on the aggregate sample of WMM are as follows:

sl no	Details	Trail No		Average	Standard Requirements as per Morth V Revision For WMM
		1	2		
1	Total weight of aggregate sample filling the cylindrical measure=W1 g	390	392	29.16	Max Value for WMM for Impact Is 30%
2	Weight of aggregate passing 2.36 mm sieve after the test = W2 g	115	113		
3	Weight of aggregate retained 2.36 mm sieve after the test = W3 g	275	279		
4	Aggregate Impact Value= percent fines 100*(W2/W1) %	29.49	28.83		

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Ref. No.: UEMC/QC-344/1A-04

TEST ON TACK COAT

DETERMINATION OF RATE OF SPREAD OF TACK COAT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**11/11/2021**

The test results conducted on the aggregate sample are as follows:

Description	Units	Test No1	Test no 2
Size of Plate	m	0.45 X 0.45	0.45 X 0.45
Area of Plate (A)	Sqm	0.2025	0.2025
Initial Wt of the plate(B)	Kg	1.622	1.622
Final weight of Plate after Application of Prime/ Tack coat (C)	Kg	1.678	1.682
Weight of Prime Coat/tack coat (D =C-B)	Kg/Sqm	0.056	0.060
Rate of Spread of Prime/ Tack Coat	Kg/Sqm	0.277	0.296
Average	Kg/Sqm	0.29	
Specified Limit	Kg/Sqm	0.2 to 0.3	

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Ref. No.: UEMC/QC-344/04-05

Test on Bitumen (VG-10)

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**11/11/2021**
Sample Supplied By:	Agency/Contractor		
Material:	Bitumen VG-10		

The test results conducted on the Bitumen VG-10 sample using for Tack Coat are as follows:

No.	Description	Test Result	IS Requirement	As per Code
1	Penetration at 25^0 C, 1/10 mm	88	80-100	IS 1203:1978 (RA 2019)
2	Softening point ,^{o}C	69	35-75	IS 1205:1978 (RA 2019)
3	Ductility at 27^0 C,cm	>100	Min 75	IS 1208:1978 (RA 2019)
4	Flash Point,^{o}C	345	Min 220	IS 1209:1978 (RA 2019)

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Ref. No.: UEMC/QC-344/01A-05

Tests on Bituminous Concrete
[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**11/11/2021**
Material :	Bituminous Concrete Gr –II	**Total weight taken:**	**450gms**

Gradation Test for BC Grade II:

Sl no	Sieve Size (mm)	Weight retained (gm)	Cumulative weight retained (gm)	% Cumulative weight retained	% Fines passing	Desired Gradation as per MoRTH Specification
1	19	0	0	0.00	100.00	100
2	13.2	20.9	20.9	4.64	95.36	90-100
3	9.5	77.7	98.6	21.91	78.09	70-88
4	4.75	71.2	169.8	37.73	62.27	53-71
5	2.36	57.3	227.1	50.47	49.53	42-58
6	1.18	44.2	271.3	60.29	39.71	34-48
7	0.6	39.7	311	69.11	30.89	26-38
8	0.3	44.1	355.1	78.91	21.09	18-28
9	0.15	27.1	382.2	84.93	15.07	12-20.
10	0.075	41.5	423.7	94.16	5.84	4-10.

Bitumen Extraction Test

Sl No	Description	Weight (gm)	Bitumen Content (%)	Required Bitumen content (%)
1	Weight of sample Before Extraction	500	5.48	5.4 min
2	Weight of Filter Paper Before Extraction	8.6		
3	Weight of Filter paper After Extraction	9.3		
4	Weight of Sample After Extraction	471.9		

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Ref. No.: UEMC/QC-344/01A-06

Tests on Aggregate
[IS:2386:1963(RA 2016)]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**09/11/2021**
Material:	Bituminous Concrete Grade II		

The test results conducted on the aggregate for BC Gr –II sample are as follows:

No.	Description	Test Result	Standard Requirements as per Morth V Revision For Bituminous Concrete
1	Flakiness index	19.8	Max Value for BC for Combined Index Of Flakiness and Elongation Is 30%
2	Elongation index	8.2	
3	Specific Gravity	3.2	2 - 4
4	Water Absorption	0.9	Max Value is 1%
5	Aggregates Impact Value	23.9	Max value is 24%

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Ref. No.: UEMC/QC-344/01A-07

Tests on Bitumen

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 04**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**11/11/2021**
Material:	Bituminous Concrete Grade II		

The test results conducted on the Bitumen sample (V-30) using for Bituminous Concrete Gr-II are as follows:

No.	Description	Test Result	Requirement As per IS	As Per Code
1	Penetration at 25^0 C, 1/10 mm	60	50-70	IS 1203:1978 (RA 2019)
2	Softening point ,^{o}C	58	Min 47	IS 1205:1978 (RA 2019)
3	Ductility at 27^0 C,cm	>100	Min 40	IS 1208:1978 (RA 2019)
4	Flash Point,^{o}C	324	Min 220	IS 1209:1978 (RA 2019)

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Ref. No.: UEMC/QC-344 /02A-01

Gradation of Wet Mix Macadam
[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**04/12/2021**
Sample Supplied by:	Agency / Contractor		
Material :	Wet Mix Macadam (WMM)	**Total weight taken:**	**10 kg**

Gradation Test for WMM Sample:

Sl no	Sieve Size (mm)	Wt retained (gm)	Cumulative wt retained (gm)	% Cumulative wt retained	% Fines passing	Desired Gradation as per MoRTH Specification
1	53	0	0	0	100	100
2	45	20	20	0.2	99.8	95-100
3	22.4	3210	3230	32.3	67.7	60-80
4	11.2	2600	5830	58.3	41.7	40-60
5	4.75	1300	7130	71.3	28.7	25-40
6	2.36	1020	8150	81.5	18.5	15-30
7	0.6	510	8660	86.6	13.4	8-22.
8	0.075	905	9565	95.65	4.35	0-8

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Ref. No.: UEMC/QC-344/01B-02

TEST ON TACK COAT

DETERMINATION OF RATE OF SPREAD OF TACK COAT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**25/11/2021**
Sample Collection:	Site		

The test results conducted on the aggregate sample are as follows:

Description	Unit	Test No1	Test no 2
Size of Plate	m	0.45 X 0.45	0.45 X 0.45
Area of Plate (A)	Sqm	0.2025	0.2025
Initial Wt of the plate(B)	Kg	1.622	1.622
Final weight of Plate after Application of Prime/ Tack coat (C)	Kg	1.682	1.680
Weight of Prime Coat/tack coat (D =C-B)	Kg/Sqm	0.060	0.058
Rate of Spread of Prime/ Tack Coat	Kg/Sqm	0.296	0.286
Average	Kg/Sqm	0.29	
Specified Limit	Kg/Sqm	0.2 to 0.3	

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Ref. No.: UEMCQC-344/01B-03

Tests on Bituminous Concrete

[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**25/11/2021**
Material :	Bituminous Concrete Gr –II	**Total weight taken:**	**450 gms**

Gradation Test for BC Grade II:

sl no	Sieve Size (mm)	Weight retained (gm)	Cummulative weight retained (gm)	% Cummulative weight retained	% fines passing	Desired Gradation as per MoRTH Specification
1	19	0	0	0.00	100.00	100
2	13.2	19.6	19.6	4.36	95.64	90-100
3	9.5	86.6	106.2	23.60	76.40	70-88
4	4.75	94.2	200.4	44.53	55.47	53-71
5	2.36	50.2	250.6	55.69	44.31	42-58
6	1.18	40.2	290.8	64.62	35.38	34-48
7	0.6	32.1	322.9	71.76	28.24	26-38
8	0.3	30.8	353.7	78.60	21.40	18-28
9	0.15	29.2	382.9	85.09	14.91	12-20.
10	0.075	31.2	414.1	92.02	7.98	4-10.

Bitumen Extraction Test

Sl No	Description	Weight (gm)	Bitumen Content (%)	Required Bitumen content (%)
1	Weight of sample Before Extraction	500	5.46	5.4 min
2	Weight of Filter Paper Before Extraction	8.1		
3	Weight of Filter paper After Extraction	8.8		
4	Weight of Sample After Extraction	472		

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Ref. No.: UEMC/QC-344/01B-01

Gradation of Wet Mix Macadam
[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**24/11/2021**
Sample Supplied by:	Agency / Contractor		
Material :	Wet Mix Macadam (WMM)	**Total weight taken:**	**10 kg**

Gradation Test for WMM Sample:

Sl no	Sieve Size (mm)	Wt retained (gm)	Cumulative wt retained (gm)	% Cumulative wt retained	% Fines passing	Desired Gradation as per MoRTH Specification
1	53	0	0	0	100	100
2	45	101	101	1.01	98.99	95-100
3	22.4	2875	2976	29.76	70.24	60-80
4	11.2	2540	5516	55.16	44.84	40-60
5	4.75	1018	6534	65.34	34.66	25-40
6	2.36	1488	8022	80.22	19.78	15-30
7	0.6	842	8864	88.64	11.36	8-22.
8	0.075	470	9334	93.34	6.66	0-8

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Ref. No.: UEMC/QC-344/2A-02

TEST ON TACK COAT

DETERMINATION OF RATE OF SPREAD OF TACK COAT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**06/12/2021**
Sample Collection:	Site		

The test results conducted on the aggregate sample are as follows:

Description	Unit	Test No1	Test no 2
Size of Plate	m	0.45 X 0.45	0.45 X 0.45
Area of Plate (A)	Sqm	0.2025	0.2025
Initial Wt of the plate(B)	Kg	1.622	1.622
Final weight of Plate after Application of Prime/ Tack coat (C)	Kg	1.679	1.683
Weight of Prime Coat/tack coat (D =C-B)	Kg/Sqm	0.057	0.061
Rate of Spread of Prime/ Tack Coat	Kg/Sqm	0.281	0.301
Average	Kg/Sqm	0.29	
Specified Limit	Kg/Sqm	0.2 to 0.3	

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Ref. No.: UEMCQC-344/02A-03

Tests on Bituminous Concrete
[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**06/12/2021**
Material :	Bituminous Concrete Gr –II	**Total weight taken:**	**450 gms**

Gradation Test for BC Grade II:

sl no	Sieve Size (mm)	Weight retained (gm)	Cummulative weight retained (gm)	% Cummulative weight retained	% fines passing	Desired Gradation as per MoRTH Specification
1	19	0	0	0.00	100.00	100
2	13.2	24	24	5.33	94.67	90-100
3	9.5	79.2	103.2	22.93	77.07	70-88
4	4.75	68.9	172.1	38.24	61.76	53-71
5	2.36	40.1	212.2	47.16	52.84	42-58
6	1.18	55.2	267.4	59.42	40.58	34-48
7	0.6	32.1	299.5	66.56	33.44	26-38
8	0.3	40.6	340.1	75.58	24.42	18-28
9	0.15	35.3	375.4	83.42	16.58	12-20.
10	0.075	46.7	422.1	93.80	6.20	4-10.

Bitumen Extraction Test

Sl No	Description	Weight (gm)	Bitumen Content (%)	Required Bitumen content (%)
1	Weight of sample Before Extraction	500	5.46	5.4 min
2	Weight of Filter Paper Before Extraction	9.1		
3	Weight of Filter paper After Extraction	9.9		
4	Weight of Sample After Extraction	472		

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Ref. No.: UEMC/QC-344/02B-01

Gradation of Wet Mix Macadam
[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**27/12/2021**
Sample Supplied by:	Agency / Contractor		
Material :	Wet Mix Macadam (WMM)	**Total weight taken:**	**10 kg**

Gradation Test for WMM Sample:

Sl no	Sieve Size (mm)	Wt retained (gm)	Cumulative wt retained (gm)	% Cumulative wt retained	% Fines passing	Desired Gradation as per MoRTH Specification
1	53	0	0	0	100	100
2	45	86	86	0.86	99.14	95-100
3	22.4	3292	3378	33.78	66.22	60-80
4	11.2	2148	5526	55.26	44.74	40-60
5	4.75	850	6376	63.76	36.24	25-40
6	2.36	1519	7895	78.95	21.05	15-30
7	0.6	428	8323	83.23	16.77	8-22.
8	0.075	986	9309	93.09	6.91	0-8

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Ref. No.: UEMC/QC-344/2B-02

TEST ON TACK COAT

DETERMINATION OF RATE OF SPREAD OF TACK COAT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**29/12/2021**
Sample Collection:	Site		

The test results conducted on the aggregate sample are as follows:

Description	Unit	Test No1	Test no 2
Size of Plate	m	0.45 X 0.45	0.45 X 0.45
Area of Plate (A)	Sqm	0.2025	0.2025
Initial Wt of the plate(B)	Kg	1.622	1.622
Final weight of Plate after Application of Prime/ Tack coat (C)	Kg	1.681	1.682
Weight of Prime Coat/tack coat (D =C-B)	Kg/Sqm	0.059	0.060
Rate of Spread of Prime/ Tack Coat	Kg/Sqm	0.291	0.296
Average	Kg/Sqm	0.29	
Specified Limit	Kg/Sqm	0.2 to 0.3	

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Ref. No.: UEMCQC-344/02B-03

Tests on Bituminous Concrete
[MORT&H V Revision]

TEST REPORT

Project Name:	Filling of potholes in Ward No 15T Dasarahalli	**Sl. No.: 01**	
Client:	Executive Engineer, Dasarahalli Division, BBMP, Bengaluru.		
Contractor:	Venkataramu (AM Enterprises), No-205/1/51/57/3, 3rd floor, Chuchaghatta, Muniswamappa garden, Bangalore	**Date:**	**29/12/2021**
Material :	Bituminous Concrete Gr –II	**Total weight taken:**	**450 gms**

Gradation Test for BC Grade II:

sl no	Sieve Size (mm)	Weight retained (gm)	Cummulative weight retained (gm)	% Cummulative weight retained	% fines passing	Desired Gradation as per MoRTH Specification
1	19	0	0	0.00	100.00	100
2	13.2	13	13	2.89	97.11	90-100
3	9.5	86.4	99.4	22.09	77.91	70-88
4	4.75	81.1	180.5	40.11	59.89	53-71
5	2.36	53.8	234.3	52.07	47.93	42-58
6	1.18	42.2	276.5	61.44	38.56	34-48
7	0.6	33.8	310.3	68.96	31.04	26-38
8	0.3	41.9	352.2	78.27	21.73	18-28
9	0.15	29.9	382.1	84.91	15.09	12-20.
10	0.075	42.2	424.3	94.29	5.71	4-10.

Bitumen Extraction Test

Sl No	Description	Weight (gm)	Bitumen Content (%)	Required Bitumen content (%)
1	Weight of sample Before Extraction	500	5.56	5.4 min
2	Weight of Filter Paper Before Extraction	8.3		
3	Weight of Filter paper After Extraction	8.9		
4	Weight of Sample After Extraction	471.6		

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